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(54) **HIGH-PERFORMANCE FULLY-COMPLIANT MICRO-MECHANISMS FOR FORCE/ DISPLACEMENT AMPLIFICATION**

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(58) **Field of Search** ..... 74/469, 470, 471 R, 74/479.01, 490.01, 490.05

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(57) **ABSTRACT**

A device for amplifying mechanical and geometrical advantage having a base structure, a first link member having a first end and a second end, and a first compliant flexural joint pivotally interconnects the first end of the first link member to the base structure. A second link member is also provided having a first end and a second end. A second compliant flexural joint pivotally interconnects the first end of the second link member to the base structure. Furthermore, a third link member is provided having a first end and a second end. A third compliant flexural joint pivotally interconnects the first end of the third link member to the second end of the first link member and a fourth compliant flexural joint pivotally interconnects the second end of the third link member to the second end of the second link member. The base structure, first link member, second link member, and third link member cooperate to define a four-bar linkage for receiving an input force and providing an amplified force or displacement output in response thereto.

11 Claims, 5 Drawing Sheets